

IN THE CLAIMS

1. (Original) A method for the encapsulation of uranium metal which comprises treating the metal with an encapsulant which comprises a cementitious material and curing said cementitious material, wherein said process additionally comprises the provision of means for the minimisation of the corrosion of said metal.
2. (Original) A method as claimed in claim 1 wherein said uranium metal is comprised in waste material.
3. (Currently Amended) A method as claimed in claim 1 [[or 2]] wherein said means for the minimisation of the corrosion of said metal comprises means for the prevention of the corrosion of said metal.
4. (Currently Amended) A method as claimed in claim 1 [[, 2 or 3]] wherein the mode for the provision of said means for the minimisation of corrosion comprises the provision of a source of oxygen within the cement matrix.
5. (Original) A method as claimed in claim 4 wherein the provision of said source of oxygen within the cement matrix comprises facilitating enhanced oxygen access from the atmosphere.
6. (Original) A method as claimed in claim 4 wherein the provision of said source of oxygen within the cement matrix comprises the inclusion of an independent source of oxygen.
7. (Currently Amended) A method as claimed in claim 1 [[, 2 or 3]] wherein the mode for the provision of said means for the minimisation of corrosion comprises facilitating the minimisation of the water content of the matrix.

8. (Original) A method as claimed in claim 5 wherein enhancement of oxygen access from the atmosphere is achieved by the incorporation of at least one air entraining agent in the cementitious material.

9. (Original) A method as claimed in claim 8 wherein said air entraining agent comprises at least one anionic or non-ionic surfactant.

10. (Currently Amended) A method as claimed in claim 8[[or 9]] wherein said cementitious material comprises 0.01-2% (w/w) of an air-entraining agent.

11. (Original) A method as claimed in claim 5 wherein enhancement of oxygen access from the atmosphere is achieved by the incorporation of cenospheres in the cementitious material.

12. (Original) A method as claimed in claim 11 wherein said cementitious material comprises 0.01-30% (w/w) of cenospheres.

13. (Original) A method as claimed in claim 6 wherein said independent source of oxygen comprises at least one peroxide.

14. (Original) A method as claimed in claim 13 wherein said peroxide comprises an inorganic peroxide.

15. (Original) A method as claimed in claim 14 wherein said inorganic peroxide comprises a peroxide of a metal from Group H of the Periodic Table.

16. (Original) A method as claimed in claim 15 wherein said peroxide comprises calcium peroxide or magnesium peroxide.

17. (Currently Amended) A method as claimed in ~~any one of claim~~[[s]] 13 [[to 16]] wherein said cementitious material comprises 0.01-10% (w/w) peroxide.

18. (Original) A method as claimed in claim 7 wherein the means for facilitating the minimisation of the water content of the matrix comprises the addition of at least one superplasticiser to the cementitious material.

19. (Original) A method as claimed in claim 15 wherein said at least one superplasticiser comprises at least one surfactant.

20. (Original) A method as claimed in claim 19 wherein said surfactant comprises a polyacrylate or polycarboxylate.

21. (Currently Amended) A method as claimed in claim 18[[, 19 or 20]] wherein said cementitious material comprises 0.01-5% (w/w) of superplasticiser.

22. (Currently Amended) A method as claimed in ~~any one of claim~~[[s]] 1 [[to 21]] wherein said cementitious material comprises Portland Cement.

23. (Currently Amended) A method as claimed in ~~any preceding~~ claim 1 wherein the cementitious material additionally comprises one or more fillers.

24. (Original) A method as claimed in claim 23 wherein said filler is selected from pulverised fuel ash, finely divided silica and organic and inorganic fluidising agents.

25. (Currently Amended) A method as claimed in ~~any preceding~~ claim 1 wherein the cementitious material is provided in the form of an aqueous composition.

26. (Original) A method as claimed in claim 25 wherein the water content of the composition is in the region of 30-50% (w/w).

27. (Original) A method as claimed in claim 25 wherein the water content of the composition is in the region of 10-50% (w/w). 28. A method as claimed in any preceding claim wherein the uranium metal is placed in an appropriate container and a cementitious material is added and allowed to at least partially cure.

29. (Original) A method as claimed in claim 28 wherein the container is subsequently capped.

30. (Currently Amended) A method as claimed in claim 28 [[or 29]] wherein the container comprises a drum having a capacity in the region of 500 litres.

31. (Currently Amended) A method as claimed in ~~any preceding~~ claim 1 which comprises mixing of said cementitious material with said means for the minimisation of the corrosion of said metal.

32. (Original) A method as claimed in claim 31 wherein said mixing is effected in the container into which the uranium metal is placed.

33. (Original) A method as claimed in claim 31 wherein said mixing is carried out externally to the said container.

34. (Original) A method as claimed in claim 33 wherein said mixing is performed in a batchwise fashion prior to addition of the cementitious material to the container.

35. (Original) A method as claimed in claim 33 wherein said mixing takes place in-line prior to the introduction of the cementitious material into the container.

36. (Original) A method for the storage of uranium metal which comprises encapsulation of the material in a cured cementitious material comprising means for the minimisation of the corrosion of said metal.